PTO/SB/33 (07-05)
United States Patent & Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) 59244.00008
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on _____ Signature _____ Typed or printed Name _____	Application Number: 10/774,695 Filed: February 10, 2004 First Named Inventor: Tuomo LEHTONEN Art Unit: 2856 Examiner: Kwok, Helen C.

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the


Signature

☐ Applicant/Inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed

David E. Brown
Typed or printed name

☐ Attorney or agent of record.
Registration No. 51,091

703-720-7883
Telephone number

☐ Attorney or agent acting under 37 CFR 1.34.
Reg. No. is acting under 37 CFR 1.34 _____

March 17, 2006
Date

NOTE: Signatures of all of the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Tuomo LEHTONEN

Art Unit: 2856

Serial Number: 10/774,695

Examiner: Kowk, Helen C.

Filed: February 10, 2004

Atty. Docket No.: 59244.00008

For: CAPACITIVE ACCELERATION SENSOR

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

March 17, 2006

This is a Pre-Appeal Brief Request for Review from the final rejection set forth in an Office Action dated October 5, 2005 ("Office Action"), finally rejecting claims 1 and 3-17. Applicants submit that cited reference fails to disclose or suggest all of the limitations of any of the pending claims and that these failures constitute clear error with regard to this final rejection. Withdrawal of the rejections is respectfully requested.

The cited reference fails to disclose or suggest all of the limitations of any of the pending claims.

The claim rejections are set forth in page 2 of the Office Action. The Office Action rejected claims 1, 3-11 and 15-17 under 35 U.S.C. §102(b) as being anticipated by US Patent No 6,000,287 to Menzel (Menzel).

Claim 1, upon which claims 3-17 depend, recites a capacitive acceleration sensor including

at least one pair of electrodes such that each pair of electrodes includes a movable electrode, which is responsive to the acceleration, and at least one stationary plate portion, wherein each pair of electrodes further includes an axis of rotation essentially forming a common axis such that the movable electrode of the acceleration sensor is rigidly supported at the axis of rotation such that the movable electrode is free to turn in a rotational motion about the axis of rotation. Further, in the capacitive acceleration sensor, a capacitance change between the movable electrode in rotational motion and the plate portion is enhanced by means of the electrodes. In the capacitive sensor, the capacitance change between the movable electrode in rotational motion and the plate portion is enhanced by means of the shape of the electrodes.

As discussed in the specification, the present invention provides an improved sensor structure which improves the capacitive sensitivity of a pair of electrodes based on rotational motion and to measure acceleration with good performance in capacitive acceleration sensor designs. According to the present invention, the shape of the electrode enhances the sensitivity of the sensor element. For example, the sensor can be in the shape of a hammer, triangle or tear drop, as described in paragraph [0018] of the present specification. The failure of Menzel to disclose or suggest all of the elements of the claims constitutes clear error with respect to the outstanding rejections.

Menzel is directed to a capacitor center of area sensitivity in angular motion micro-electromechanical systems. The microaccelerometer includes a stationary plate electrode and a moveable plate electrode substantially parallel with the stationary plate electrode. The movable plate electrode rotates through a dielectric fluid about an axis of rotation parallel to the stationary plate electrode in response to acceleration. The center of area of the stationary plate is

changed relative to the movable plate to obtain a particular sensitivity. Thus, in Menzel the length of the stationary electrode is adjusted in order to determine the desired sensitivity. Further, Menzel only discloses rectangular-shaped electrodes, see column 1 line 66 – column 2 line 8.

As shown in figure 5, curve 13 depicts the best possible change, expressed in percentages, in the capacitance of an ordinary pair of electrodes with surfaces of rectangular shape (see paragraph [0054] of the present specification). Thus, using the redimensioning methods described in Menzel, the sensitivity of a rectangular shaped sensor can be adjusted below curve 13, or at most on curve 13. This is in inferior to the sensitivity of a pair of electrodes in the triangle shape. This increased sensitivity is shown as curve 14 of Figure 5 of the present invention and described in paragraph [0055] of the present invention.

Applicants respectfully submit that the Office Action failed to establish a prima facie case for anticipation because the cited reference fails to disclose or suggest all of the features of any of the pending claims.

Applicants respectfully submit that the cited reference fails to disclose or suggest at least the feature that the capacitance change between the movable electrode in rotational motion and the plate portion is enhanced by means of the shape of the electrodes, as recited in claim 1.

"A claim is anticipated only if each and every element set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Office Action asserted that Menzel disclosed the feature that the capacitance change between the movable electrode in rotational motion and the plate portion is enhanced by means of the shape of the electrodes, as recited in claim 1. However, the Office Action inappropriately

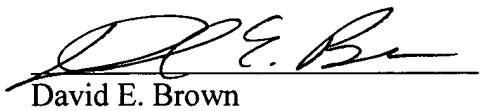
equates the term "shape" with the term "size". Menzel merely discloses changing the length (i.e. size) of a rectangular electrode, which is not the same as the shape of the electrode, because if the length of a rectangle is changed, it still remains a rectangle. See Menzel at column 1 lines 66 and 67. However, electrodes with different shapes will provide for different centers of gravity that depend in large part on the shape of the electrode, whether the electrode be in the form of a triangle, hammer, or tear-drop shape (see at least paragraph [0057] of the present specification). Further, as discussed in the present specification, the active dimension of the electrode is further enhanced, varied and influenced by the shape of the electrode. Further, as discussed above the sensitivity of the electrode is enhanced depending on the shape of the electrode. Thus, Menzel fails to disclose or suggest the feature that the capacitance change between the movable electrode in rotational motion and the plate portion is enhanced by means of the shape of the electrodes, as recited in claim 1. Because, the term "shape" is does not inherently include or is equal to "size" with respect to an electrode of the present invention.

Based at least on the above, Applicant respectfully submits that Menzel fails to disclose or suggest all of the features of any of the pending claims. Thus, the failure to establish a prima facie case of anticipation constitutes clear error on the part of the Office Action.

Conclusion

For all of the above noted reasons, it is respectfully requested that the outstanding rejections be withdrawn, because the cited references do not teach or suggest all of the elements of any of the presently pending claims. Hence, the lack of a *prima facie* case of anticipation constitutes clear error as a basis for rejecting the presently pending claims. Therefore, it is respectfully requested that all of the pending claims be allowed, and that this application be passed to issue.

Respectfully submitted,



David E. Brown
Registration No. 51,091

Customer No. 32294
SQUIRE, SANDERS & DEMPSEY LLP
14TH Floor
8000 Towers Crescent Drive
Tysons Corner, Virginia 22182-2700
Telephone: 703-720-7800
Fax: 703-720-7802

DEB/jkm

Enclosures: Form PTO/SB/33
Notice of Appeal
Petition for Extension of Time